CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1   1.   A computer implemented product catalog for use in a web-centric

2   collaborative engineering environment (CEE) for providing an inter-

3   enterprise collaborative mechanism for organizations developing and

4   maintaining complex system products, the CEE providing a federated

5   architecture linking multiple systems and applications together to enable

6   collaboration among enterprise members, comprising:

7   an object oriented database management system (ODBMS)

8   managing an associative object model (product model) for providing a

9   persistent understanding of product and program information, assets and

10   tools available in the enterprise;

11   a plurality of part objects forming a product catalog, the part

12   objects being defined by the product model and stored in the ODBMS,

13   wherein each part object has intrinsic characteristics corresponding to a

14   default environment, the product catalog providing an application

15   independent means for supporting engineering tools through intelligent

16   interfaces;

17   means for generating part references, where a part reference refers

18   to a corresponding part object in the product catalog, and wherein the part

19   reference has characteristics customized for a project that override or

20   extend the intrinsic characteristics of its corresponding part object; and

21   means for linking members of the enterprise with part objects and

22   customized part references via a collaborative engineering environment

23   (CEE), the CEE having a framework for collaboration which provides

24   access control, security, search mechanisms, concurrency control,

25   versioning, information structuring, information mapping and exchange,

26   wherein the information available to each member is information

27   necessary for the member to complete role and team based tasks, and

28   wherein the linking means comprises a plurality of tools, each tool

29   communicating information with the ODBMS.

1   2. A system as recited in claim 1, wherein a part object is a collection of

2   one or more other part objects.

1   3. A system as recited in claim 1, wherein a part objects represent

2   commercial-off-the-shelf (COTS) hardware, electrical, software, or

3   abstract component types.

1   4. A system as recited in claim 1, wherein the product catalog supports

2   part objects representing commercial-off-the-shelf (COTS) hardware,

3   electrical, software, and abstract component types.

1   5. A system as recited in claim 1, wherein the product catalog provides a

2   single point of information management with unlimited application by

3   reference.

1   6. A system as recited in claim 1, wherein the CEE enables members of

2   the enterprise to capture technology and model information and associate

3   the captured information with a system component for entry into the

4   product catalog.

1   7. A system as recited in claim 6, wherein the parts and components in the

2   product catalog are extensible to an existing user community in an

3   enterprise, the user community requiring customization of parts for use in

4   projects associated with the enterprise.

1   8. A system as recited in claim 1, wherein the product catalog provides a
2   single extensible interface for peer information management systems.

1   9. A system as recited in claim 1, wherein the product catalog supports
2   part objects representing projected or hypothetical components.

1   10. A system as recited in claim 1, wherein intrinsic information of a
2   component, the component being represented by one or more parts in the
3   product catalog, is augmented with implementation specific information.

1   11. A method for customizing a product catalog for use by a project in a
2   collaborative engineering environment (CEE) which provides an inter-
3   enterprise collaborative mechanism for organizations developing and
4   maintaining complex system products, and provides a federated
5   architecture linking multiple systems and applications together to enable
6   collaboration among enterprise members, comprising:
7   generating a product model for the project, wherein the product
8   model defines project related informational elements and their
9   corresponding characteristics, and wherein the project related
10   informational elements may differ based on domain area;
11   identifying elements (parts) existing in a enterprise-wide product
12   catalog;
13   customizing the existing parts for the project, by referring to
14   default characteristics of the existing parts and when desired specifying
15   overriding and/or extending part characteristics unique to the project;
16   if necessary to fully implement the project product model,
17   providing new parts for the product catalog; and
18   integrating the project product model with domain-specific tools
19   and application used by members of the enterprise, thereby enabling
20   collaboration among enterprise members who have immediate access to

21 information stored in the ODBMS by other members, wherein each

22 member performs domain specific tasks using customized tools and

23 applications and stores results of their performed tasks in the ODBMS,

24 thereby allowing access of their information by other members of the

25 enterprise.

1 12. A method as recited in claim 11, wherein the product catalog utilized

2 for identifying parts in the identifying step and providing new parts in the

3 providing steps comprises:

4 an object oriented database management system (ODBMS)

5 managing an associative object model (product model) for providing a

6 persistent understanding of product and program information, assets and

7 tools available in the enterprise;

8 a plurality of part objects forming a product catalog, the part

9 objects being defined by the product model and stored in the ODBMS,

10 wherein each part object has default characteristics corresponding to a

11 default environment;

12 means for generating part references, where a part reference refers

13 to a corresponding part object in the product catalog, and wherein the part

14 reference has characteristics customized for a project that override the

15 default characteristics of its corresponding part object; and

16 means for linking members of the enterprise with part objects and

17 customized part references via a collaborative engineering environment

18 (CEE), the CEE having a framework for collaboration which provides

19 access control, security, search mechanisms, concurrency control,

20 versioning, information structuring, information mapping and exchange,

21 wherein the information available to each member is information

22 necessary for the member to complete role and team based tasks, and

23 wherein the linking means comprises a plurality of tools, each tool

24 communicating information with the ODBMS.

1   13. A method as recited in claim 11, wherein the step of providing new
2   parts, further comprises:
3   capturing technology and model information by members of the
4   enterprise; and
5   associating the captured information with a system component for
6   entry into the product catalog.

1   14. A method as recited in claim 13, further comprising:
2   entering new part objects into the product catalog, wherein the new
3   part objects correspond to system components associated in the associating
4   step.

1   15. A method as recited in claim 13, further comprising:
2   entering updated part object information into the product catalog
3   when captured information results in necessary modification to an existing
4   part and not identification of a new part, wherein the updated part objects
5   correspond to system components associated in the associating step.

1   16. A method as recited in claim 13, wherein the new or updated part
2   objects are reviewed by at least one member of the enterprise having
3   authority to accept or reject the part objects, and wherein if a new or
4   updated part object is rejected it is not entered into the product catalog, but
5   if a new or updated part object is accepted, it is entered into the product
6   catalog.

1   17. A method as recited in claim 16, further comprising notifying
2   members of the enterprise that new parts or part information are available.

1   18. A method as recited in claim 17, wherein the step of notifying further

2   comprises automatically updating project specific parts and components

3   with modified part information for updated parts.

1   19. A method as recited in claim 11, further comprising:

2   retrieving part information from the part catalog by members of a

3   project within the enterprise; and

4   customizing retrieved part information for use in a project.

1   20. A method as recited in claim 19, wherein the step of customizing

2   further comprises:

3   maintaining desired default characteristics for retrieved part

4   information;

5   overriding default characteristics for retrieved part information, as

6   necessary to represent system components of the project; and

7   extending part information with additional part characteristics, as

8   necessary to represent system components of the project, the additional

9   part characteristics being omitted from part information retrieved in the

10   product catalog.